PATENT COOPERATION TREATY

U 015296-2

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
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NEW YORK, NY 10023

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DEC - 1 2003

PCT

WRITTEN OPINION

(PCT Rule 66)

Date of Mailing *(day/month/year)*	25 NOV 2003
Applicant's or agent's file reference 9480.0-01A	REPLY DUE within 2 months/days from the above date of mailing

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US03/02972	31 January 2003 (31.01.2003)	31 January 2002 (31.01.2002)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): C10C 3/00; H01M 4/02, 4/08, 4/24, 4/36. and US Cl.: 250/502, 511; 206/44; 264/29.1; 106/284.01; 429/231.8; 201/21, 24; 423/445R, 447.9, 448

Applicant

CONOCOPHILLIPS COMPANY

1. This written opinion is the first (first, etc,) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 *bis*.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 31 May 2004 (31.05.2004).

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Form PCT/IPEA/408 (cover sheet)(July 1998)

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HRW 76056 | 12/25/03

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WRITTEN OPINION

International application No.
PCT/US03/02972

I. Basis of the opinion

1. With regard to the **elements** of the international application:*

☒ the international application as originally filed

☒ the description:
pages 1-65, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

☒ the claims:
pages 66-74, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

☒ the drawings:
pages 1-2, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages NONE

☐ the claims, Nos. NONE

☐ the drawings, sheets/~~fig~~ NONE

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."*

WRITTEN OPINION

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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims	35-37, 54, 66-70	YES
	Claims	1-34, 38-53, 55-65, 71-72	NO
Inventive Step (IS)	Claims	35-37, 54, 66-70	YES
	Claims	1-34, 38-53, 55-65, 71-72	NO
Industrial Applicability (IA)	Claims	1-72	YES
	Claims	NONE	NO

2. CITATIONS AND EXPLANATIONS
Please See Continuation Sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claim 37 objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof: Claim 37 improperly depends on itself and has been treated to be dependent on Claim 35 for the purposes of the examination. Appropriate correction needed.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:
The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V. 2. Citations and Explanations:
Claims 44-53, 65, 72 lack novelty under PCT Article 33(2) as being anticipated by Nippon (JP 09-231974A). Nippon teaches blending of 20-50 parts by wt of binder pitch and 100 parts by wt of specific coke powder with a particle size less than 10 μm by kneading, compacting, air oxidation of the green material followed by graphitizing, the resulting product having a particle size of 5-30 micron and a surface area of 8 m2/g (Abstract). Nippon also teaches making of an electrode and a lithium battery (Table-3).

Claims 1, 5-11, 23-28, 30-34, 40-41, 55-64 and 71 lack an inventive step under PCT Article 33(3) as being obvious over Nippon (JP 09-231974A). The disclosure by Nippon is set forth as above and the process steps would have been obvious control steps known in the art.

Claims 44-53 lack novelty under PCT Article 33(2) as being anticipated by Hayashi et al (US 5,906,900). Hayashi et al teach a composite carbonaceous material in which to the surface of a graphite-like carbonaceous material is attached a carbonized material and the methods to make the coated carbonaceous material with low surface area and their use in non-aqueous electrodes/batteries. Graphite-like carbonaceous material with a particle size of less than 30 μm was mixed with fusible/soluble organic or thermosetting polymer using organic solvents, and the coated material was heated step-wise up to 300°C under inert atmosphere or vacuum effecting carbonization and graphitization. The nonaqueous battery showed good charging and discharging efficiencies. (Abstract, Col-2, Ln: 12-40; Col-3, Ln-6 to Col-10, Ln-37; Col-11. Example-1; Col-19, Table-2).

Claims 1-34, 38-43, 55-65 and 71-72 lack an inventive step under PCT Article 33(3) as being obvious over Hayashi et al (US 5,906,900) in view of Asano et al (US 4,042,486) and further in view of Asano et al (US 4,293,533). The disclosure by Hayashi et al on the coated carbon, process of coating and the electrode/battery is set forth as above. Asano et al (US 4,042,486) teaches coating the surface of raw pitch particles with a thermosetting resin, wet/dry oxidation of the surface coating and carbonization in non-oxidative atmosphere (Col-3, Ln-17 to Col-6, Ln-17). Asano et al (US 4,293,533) teaches coating the surface of a raw pitch particles of diameter less than 50 μm with an organic using a solvent followed by carbonization and optional graphitization forming coated product of either low or highly graphitized nature (Col-1, Ln: 45-55; Col-2, Ln: 64-68; Col-3, Ln-4 to Col-4, Ln-30).

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Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Claims 1, 5-11, 23-28, 30-34, 40-41, 44-53 and 65 lack novelty under PCT Article 33(2) as being anticipated by Osaka (JP 11-246209A). Osaka teaches coating of isotropic pitch on graphite/hard-carbon surface by dipping, oxidation of pitch in air, carbonization in inert atmosphere producing a coated carbonaceous material with a surface area less than 3 m2/g and the use of the material as negative electrode material for lithium secondary cell with good discharge capabilities (Abstract, Table-1).

Claims 1, 5-11, 23-25, 44-49 and 65 lack novelty under PCT Article 33(2) as being anticipated by NKK (JP 01-305859A). NKK teaches making of high-density carbon material for electrodes by mixing graphite powder with coal tar pitch, pulverizing the mixture, further subjecting to oxidation treatment, then molding the mixture followed by carbonization and graphitization (Abstract).

Claims 26-28, 30-34, 40-43 lack an inventive step under PCT Article 33(3) as being obvious over NKK (JP 01-305859A) in view of Nippon (JP 09-231974A). The disclosure by NKK and Nippon are set forth as above and the particle size of the carbon and the use of various oxidants in the manufacture of coated carbon are well known in the art.

Claims 35-37, 54, 66-70 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the use of solid oxidants, mixing of the two solutions at an elevated temperature and the partial coating of the particles per the limitations of the instant claims by the applicants.

Claims 1-72 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

---------- NEW CITATIONS ----------